NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

Canada.—At the end of September there were many prairie fires in Saskatchewan and Manitoba. Sufficient rain fell at the beginning of October to extinguish them, but not before considerable loss had been caused to farmers.[1]

Alaska.—Nome, September 17: Capt. Roald Amundsen's expedition ship, the *Maud*, which left this port nearly two months ago, bound for the North Pole, is caught in the ice about 20 miles off Cape Serge, on the Siberian coast, according to information brought here yesterday by Capt. Heckla, whose fishing boat was also icebound near the *Maud*. * * *.—*New York Times, September 18, 1920.*

British Isles.—In many respects the weather of September was more nearly normal than was the case during the three previous months. * * * The general rainfall expressed as a percentage of the average was: England and Wales, 95; Scotland, 87; Ireland, 87; * * *.

In London (Camden Square) the month was generally cloudy with frequent rain, The mean temperature was 57.9° F., or 0.2° F. above the average.[1]

Continental Europe.—At the beginning of the month anticyclonic areas were situated over Scandinavia and the Azores, and low-pressure areas over Central Europe and Iceland. On the 3d the northern anticyclone moved northward to Spitzbergen, and a depression moving in from Iceland was by the 5th centered over southern Scandinavia, causing very unsettled weather in its passage, with gales over Denmark and the southern Baltic.

Meanwhile the Azores anticyclone began to spread slowly in a northeasterly direction. By the 8th this anticyclone covered southern England, northern France and Germany, and by the 11th it was centered over western Germany, whence it moved slowly southeast.

Pressure still continued high at the Azores and Spitzbergen, and depressions, moving in an easterly direction from Iceland, caused heavy rain in places. At Oxo (southern Norway) 72 millimeters of rain fell on the 15th. On the 16th a depression appeared to the westward of the British Isles, crossed them on the 18th, and reached southern Scandinavia on the 19th, whence it moved northward, and by the 22d was over Spitzbergen. Some heavy rainfalls occurred during this period, especially in France and Switzerland * * *.

By the 22d an anticyclone extended from the Azores to the Baltic, and high pressure was maintained over western and central Europe until the end of the month, although small shallow depressions over France caused local heavy rain. On the last day of the month a deep depression approached the southwest of the British Isles and affected France, causing heavy falls of rain * * *. Temperatures throughout the month were not high except locally in southern Europe * * *.

In Italy and the eastern Mediterranean the weather throughout the month was warm and for the most part fine, except for some local rain in Italy, more especially in the northern districts.[1]

India.—The rainfall in India has been variable, many districts receiving an excess and others a deficiency. The Punjab is badly in need of rain, but the position has improved in the Bombay Presidency, as well as in the Western Deccan, in the United Provinces, in Hyderabad, and in Madras.[1]

China.—The long continued drought in the Honan Province of China has led to severe famine, so that thousands of lives are in danger, and it is estimated that it will take years for the district to recover. A certain amount of rain fell, however, in the Province during September.[1]

Philippine Islands.—Manila, September 13.: Heavy loss of life and property damage resulted in the northern Provinces of Luzon Island, of which Manila is the largest city, from the typhoon and floods on August 30, according to advices received to day * * *.

Several towns and villages were practically destroyed, many of the inhabitants being drowned. The damage to rice and tobacco fields was exceedingly heavy.—*New York Times, September 14, 1920.*

Argentina.—A message from Buenos Aires, dated September 22, stated that moderate to heavy rains were falling generally over the Argentine. This rainfall constitutes a definite break in the drought which has been damaging the various crops for a considerable period.[1]

[1] *The Meteorological Magazine*, October, 1920, pp. 207 and 212.

DETAILS OF THE WEATHER OF THE MONTH IN THE UNITED STATES.

CYCLONES AND ANTICYCLONES.

By EDWARD H. BOWIE, Supervising Forecaster.

Five well-defined low pressure and three well-marked high pressure systems crossed the American Continent during the month. The first of the low pressure systems made its appearance over Alaska on August 31, and reached the Atlantic coast on September 7; the second in Alaska on the 6th and 7th, reached the Atlantic States on the 12th; the third in Alaska between the 10th and 14th, reached the Atlantic on the 17th; the fourth, in Alaska on the 20th–22d, reached the Atlantic States on the 26th and the fifth, in Alaska on the 25th and 26th, reached the Atlantic States on the 30th. The first of the high pressure systems was over the Canadian western provinces at the beginning of the month; the second was in the northwest on the 17th to the 19th, and the third in the northwest on the 27th to 29th. In addition to these extra-tropical pressure systems, four disturbances of tropical origin reached the American coasts during the month. The first of these, one of moderate intensity, was off the south Atlantic coast on the 5th and passed thence northeastward along the coast and reached the Canadian Maritime Provinces on the 8th and 9th. The second apparently had its origin on the 17th or 18th, over the southwestern part of the Caribbean Sea and moved thence in a northwesterly direction and its center passed inland over Louisiana during the night of the 21st. Detailed reports of this storm will be found on pages 520–524 of this REVIEW. The second disturbance of a tropical nature passed inland over North Carolina during the night of the 22d; it was of small diameter but of moderate intensity. It is reported to have caused a gale of 72 miles per hour at the mouth of the Cape Fear River during the night of the 22d, carrying the light ship several miles west of its position where anchored. The S. S. *Louisiana* encountered this storm off the Carolina coast on the 22d and estimated the velocity of the wind at 90 miles per hour and from the north. The third disturbance of a tropical character apparently formed over the south central portion of the Gulf of Mexico on the 26th, moved northward and during the evening of the

29th its center was but a short distance south southeast of the mouth of the Mississippi River whence it moved northeastward, crossed the coast line near Cedar Keys, Fla., and then moved northeastward along the coast and reached New England during the night of the 30th. For a detailed report of this disturbance see page 524, above.

Lows.

	Alberta.	Northern Pacific.	Southern Pacific.	Northern Rocky Mountain.	Colorado.	Texas.	East Gulf.	South Atlantic.	Central.	Total.
September, 1920..	5.0	2.0	2.0	0.0	0.0	0.0	3.0	1.0	1.0	14.0
Average number, 1892-1912.....	4.1	1.0	0.4	0.6	0.7	0.3	0.3	0.2	0.7	8.5

Highs.

	Northern Pacific.	Southern Pacific.	Alberta.	Plateau and Rocky Mountain Region.	Hudson Bay.	Total.
September, 1920.....	2.0	0.0	4.0	2.0	2.0	10.0
Average number, 1892-1912.....	2.0	1.0	3.5	0.7	0.6	7.9

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

[Weather Bureau, Washington, D. C., Nov. 1, 1920.]

PRESSURE AND WINDS.

The variations in atmospheric pressure during September were much better defined than those of the preceding month. In fact, there were several phases of the pressure distribution that attained unusual proportions. A notable high area overspread the northern districts during the first few days of the month, and frequent changes from high to low were observed thereafter. At the end of the month, some of the lowest pressure readings ever observed were recorded at points along the New England Coast.

Two tropical hurricanes entered the Gulf States during the month. The first approached the coast to westward of the mouth of the Mississippi River the night of the 21st–22d and moved during the following day or two as far north as Iowa. The second moved over the Florida Peninsula the night of the 29th–30th and during the following day advanced along the Atlantic coast, causing record-breaking low-pressure readings; and high winds at a few points. More complete details of these storms will appear in another portion of the REVIEW.

For the month as a whole, pressure averages were below normal in all portions of the United States and Canada save along the California coast, where they were slightly above normal. Over the United States the departures were usually small, but in the Canadian Northwest and over the Maritime Provinces they were of considerable extent.

The pressure distribution favored southerly winds over the central valleys, Lake region, and Great Plains, but along the Atlantic coast they were frequently from the northeast, while westerly winds prevailed as usual over the Pacific Coast States.

The general circulation of the atmosphere was not such as to induce high winds, save in connection with the two Gulf storms, and in these cases the wind velocities were mainly high only as they approached the land.

TEMPERATURE

The month as a whole was free from marked temperature changes and only in restricted areas were the extremes of former years equaled. The early part of the month was generally cool over the districts from the Rocky Mountains eastward, and by the end of the first decade cool weather for the season had overspread the far western States. At the same time, however, there was a gradual return to warmer weather over the eastern districts. The middle decade of the month was very generally warmer than normal from the Rocky Mountains eastward, particularly over the Great Plains and central valleys, where warmer weather and sunshine were much needed to bring the late crops, particularly corn, to proper maturity. However, near the end of the decade cooler weather overspread the northern districts from the Great Lakes eastward, and frosts, mostly light, occurred as far south as New Jersey and eastern Pennsylvania.

During the early part of the third decade, warm weather still continued over the principal corn-growing States of the Middle West, but from the Rocky Mountains westward it was mainly cool, particularly about the Middle of the decade, when frosts and freezing weather overspread large areas, and the lowest temperatures ever observed in September were reported from points in Utah and Nevada. Toward the end of the last decade high pressure moved into the northwestern districts from Canada, accompanied by freezing temperatures, and by the morning of the 29th had overspread the Great Plains and central valleys, causing the first severe frost of the season as far south as Kansas. During the closing days of the month the cool area extended into the Gulf States, giving the lowest temperatures for September in a period of 50 years at points in Alabama and other Southern States, and killing frosts extended to Oklahoma, the upper Mississippi Valley, and into the Great Lakes region.

Maximum temperatures above 90° were reported in all the States and they were 100° or above in many of the Southern and Western States. Over the Southeastern States and to westward of the Rocky Mountains the warmest period was near the beginning of the month. Over the remaining districts the warmest days were during the second decade except in the Northeastern States where they occurred near the middle of the last 10-day period.

The lowest temperatures of the month occurred on the last two days, except in the far West where they occurred a few days earlier, and over the Northeastern States where the coldest period was about the 20th.

The average temperature for the month was above normal, though not materially so, over all districts from the Rocky Mountains eastward. In portions of the Ohio Valley and adjacent regions, September was the first month since March with average temperature above the normal. The change to warmer weather during this month was of untold benefit in bringing crops to maturity before the usual period of frost.

West of the Rocky Mountains the monthly averages were mostly below normal, particularly in the Plateau region, where cold weather persisted for long periods.

PRECIPITATION.

Thunderstorm activity was the source of much of the rainfall during the month, and as a result great variations occurred in the amounts received at near-by stations.

The first half of the month was distinctly rainy over the central valleys and southern districts, although periods